

**Background and Considerations of Shoreland Zoning
Rules and Regulations
As They Relate to the Study of Restoring Tidal Flow
To the West Branch of the Pleasant River**



Prepared for

The Town of Addison and the
West Branch Study Committee

Prepared by

Bonnie Cowle
Cowle Consulting
572 Gouldsboro Point Road
Gouldsboro, Maine 04607

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INTRODUCTION

The West Branch Study Committee, as authorized by the Towns of Columbia and Addison, has been gathering and examining a multitude of informational layers, including; local knowledge, existing and emerging sets of historical and scientific data, new topographic maps, and information on the jurisdictions and regulations of various federal, state and local entities as they relate to the study of restoring tidal flow to the West Branch of the Pleasant River. The Committee has requested information on what impact restored tidal flow may have on areas, uses and permitting within the shoreland zone along the West Branch and its tributaries in both communities. Neither the Committee nor the Towns are proposing any specific plans for changes to the West Branch dam and tide gates, or the amount of tidal flow to be restored. Therefore the use of the terms “restoration” or “reintroduction” of tidal flow should not be interpreted as meaning full tidal flow. It is more than likely that any future restoration efforts will begin with the introduction of smaller amounts of tidal water.

This paper will supply a general background on shoreland zoning and specifics from the *State Guidelines for Municipal Shoreland Zoning Ordinances* (Department of Environmental Protection, May 2006) that are pertinent to West Branch property owners and the Study Committee. The relevant issues concerning how restoration of tidal flow into the West Branch may affect the watershed and shoreland zoning regulations will then be addressed through a series of questions and descriptive answers, according to the requirements and definitions from the *State Guidelines* and DEP staff.

BACKGROUND

Over the years, shoreland zoning has become widely known and accepted in Maine and is heralded in many parts of the country as a national model of responsible environmental legislation. The **Mandatory Shoreland Zoning Act** (Title 38 M.R.S.A. sections 435-449) was enacted by the Maine Legislature in 1971 and continues to be periodically amended in response to environmental and citizen concerns (*Maine Shoreland Zoning, A Handbook for Shoreland Owners*).

As stated in the Act, its intent and purpose is:

“To aid in the fulfillment of the State’s role as trustee of its waters and to promote public health, safety and the general welfare, it is declared to be in the public interest that shoreland areas be subject to zoning and land use controls. ... The purposes of these controls are to further the maintenance of safe and healthful conditions; to prevent and control water pollution; to protect fish spawning grounds, aquatic life, bird and other wildlife habitat; to protect buildings and lands from flooding and accelerated erosion; to protect archaeological and historic resources; to protect commercial fishing and maritime industries; to protect freshwater and coastal wetlands; to control building sites, placement of structures and land uses; to conserve shore cover, and visual as well as actual points of access to inland and coastal water; to conserve natural beauty and open space; and to anticipate and respond to the impacts of development in shoreland areas.” (38 M.R.S.A. section 435)

With such a long list of purposes, it is no wonder that shoreland zoning has had such far reaching effects on the shorelands of Maine and the lives of those who live, work, and play there. This

important natural resource law has stood the test of time and the positive impacts it has had on Maine's water bodies are undeniable.

The Mandatory Shoreland Zoning Act establishes a balance of State oversight and municipal control. The law requires the Department of Environmental Protection (DEP), its Commissioner and the Board of Environmental Protection to provide minimum guidelines and oversight to assure compliance with the legislative purposes and requirements of the law, whereas primary authority for adoption, administration and enforcement of shoreland zoning ordinances rests with the municipalities. The respective roles and responsibilities, as stipulated by the Act are outlined below.

The State role:

- The Board of Environmental Protection shall:
 - adopt, and from time to time shall update and amend, minimum guidelines for municipal zoning and land use controls that are designed to carry out the legislative purposes described in section 435 and the provisions of this article (38 M.R.S.A. section 438-A(1)).
- The DEP shall:
 - Review, and the Commissioner of the DEP shall approve (or disapprove) local ordinances to ensure compliance with the minimum guidelines and statute (section 438-A(3));
 - The Commissioner shall request and the Board may adopt suitable ordinances for those municipalities who fail to adopt a consistent ordinance (section 438(4))
 - Provide assistance to other state agencies, municipal officials and landowners in the form of workshops, publications and staff time (section 443-A (1));
 - Monitor local compliance to ensure that the local ordinances are followed (sections 441(3)(C), 443-A(3), and 449); and
 - Report biennially (every other year) to the Legislature on shoreland zoning implementation, assistance, supervision, violations, court actions, impacts, and recommendations (section 449).

The municipal role:

- In accordance with a comprehensive plan, municipalities shall prepare, adopt and submit for approval, a zoning and land use ordinance that is consistent with or no less stringent than the minimum guidelines (section 438-A(2));
- Put administrative procedures in place to administer the ordinance through a permit application, review, permitting and inspection process;
- The municipal officials shall annually appoint/reappoint a code enforcement officer (can be the planning board) who will have the responsibility to (section 441(1)and (3)):
 - Enforce the local shoreland zoning ordinance;
 - Collect and remit any authorized shoreland zoning permit application fee;
 - Keep a complete record of all essential transactions of the office (applications, permits, revocations, variances, appeals, court actions, violations);
 - On a biennial basis, submit a summary of this record to the DEP; and
 - Investigate alleged violations of the ordinance.

The minimum guidelines, developed by DEP and adopted by the Board are contained in the official DEP Rules as Chapter 1000, the **State of Maine Guidelines for Municipal Shoreland Zoning Ordinances** (hereafter referred to as State Guidelines). As required by the Act, these guidelines establish the land areas to be included in the shoreland zone, the criteria for establishment of districts and zoning maps, allowed uses within the various districts, land use development standards, ordinance administration and definitions. The State Guidelines are often referred to as the State Model Ordinance and as required by law are reviewed and periodically amended through the official rulemaking process. Municipalities use the State Guidelines as a model for their local shoreland zoning regulations, which can be incorporated into a town-wide zoning ordinance or adopted as a separate Shoreland Zoning Ordinance. The local Ordinance will not become effective until the Commissioner of DEP approves the municipal regulations to assure they meet or exceed the minimum requirements contained in the State Guidelines.

The Town of Addison had a State Imposed Ordinance from 1981 until 1991, at which time the town approved and adopted its first Shoreland Zoning Ordinance. The Ordinance was amended in 1997 and the Town's Shoreland Zoning Map was revised in 2004 to reflect the '97 zoning changes. All of the shoreland zone areas along the West Branch of the Pleasant River and its unnamed tributary to the east are currently mapped as Limited Commercial Districts, with the exception of two very small areas that are mapped as Resource Protection Districts.

The Town of Columbia has never approved the adoption of its own ordinance. They have had State Imposed Ordinances since the 1970s which they are required to administer and enforce under the Mandatory Shoreland Zoning Act (section 438-A(4)). The effective date of their current State Imposed Ordinance is January 17, 1995 and their Map, also imposed by the State, is dated August 21, 1993. The shoreland zone areas abutting the West Branch of the Pleasant River, Branch Brook and Bells Brook are all currently mapped as Stream Protection Districts.

STATE GUIDELINES AS THEY RELATE TO THE WEST BRANCH

The most recent amendments to the State Guidelines became effective May 1, 2006. Municipalities have been notified by DEP that local Shoreland Zoning Ordinances and Maps are to be updated and adopted no later than July 1, 2008 to reflect the new State Guidelines. According to DEP's Shoreland Zoning Unit, there is no legislation pending in the 2007 regular session of the Maine Legislature that would impact the portions of the Guidelines that relate to the issues being presented in this paper (Baker). Therefore, the information and discussion provided in this paper will be based on the requirements of the 2006 State Guidelines, which will soon be incorporated into the local Ordinances.

The following sections will focus on those areas in the State Guidelines that are central to the issue of how changes in the tidal flow on the West Branch may affect shoreland zoning and property owners.

Shoreland Zone Areas and Important Definitions

The Mandatory Shoreland Zoning Act, the State Guidelines and the local Shoreland Zoning Ordinance describe the land areas adjacent to water bodies that are to be protected and regulated. They include:

- “All land areas within 250 feet (measured horizontally) of the
 - Normal high-water line of any great pond or river,
 - Upland edge of a coastal wetland, including all areas affected by tidal action, or
 - Upland edge of a freshwater wetland,

- AND -

- All land areas within 75 feet, horizontal distance, of the normal high-water line of a stream.”

It is important to recognize that many of the above terms are officially defined in the ordinance and a clear understanding of these terms is critical for proper mapping of the shoreland zone, administration of the ordinance and field measurements at sites of proposed development. The definitions of the terms used above that are central to the discussion of the West Branch are listed below.

Coastal wetland – all tidal and subtidal lands; all lands with vegetation present that is tolerant of salt-water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat, or other contiguous low land that is subject to tidal action during the highest tide level for the year in which an activity is proposed. [Note: all areas below the maximum spring tide level are coastal wetlands. These areas may consist of rocky ledges, sand cobble beaches, mud flats, etc., in addition to salt marshes and salt meadows.]

Freshwater wetland – freshwater swamps, marshes, bogs and similar areas, other than forested wetland, which are:

- 10 or more contiguous acres, or
- Less than 10 acres and adjacent to a surface water body, *excluding any river, stream or brook*, such that the combined surface area is greater than 10 acres,

AND

- Inundated or saturated by surface or ground water sufficient to support a prevalence of wetland vegetation typically adapted for life in saturated soils.

Upland edge of a wetland – the boundary between upland and wetland

- For coastal wetlands it is the line formed by the landward limits of the salt tolerant vegetation and/or the maximum spring tide level.
- For freshwater wetlands it is the line formed where soils are not saturated for a duration sufficient to support wetland vegetation; or wherever wetland vegetation is dominated by woody stems ≥ 6 meters tall.

River – a free-flowing body of water including its associated flood-plain wetlands from that point at which it provides drainage for a watershed of twenty five square miles, to its mouth. [Note: that portion of a river that is subject to tidal action is a coastal wetland, by definition.]

Stream – a free-flowing body of water from the outlet of a great pond or the confluence of two perennial streams as depicted on the most recent edition of a USGS 7.5 minute series topographic map, or if not available, a 15-minute series topographic map, to the point where the body of water becomes a river or flows to another water body or wetland within the shoreland area.

Discussion of the Shoreland Zone Area in the West Branch Watershed - Following the construction of the dam and tide gates, the majority of the saltwater wetlands that were previously in the West Branch watershed, transitioned to freshwater wetlands. This has been substantiated in a 2006 report on the vegetation and soil types in the West Branch floodplain and wetland areas (EA Engineering, Science and Technology, Inc.). Figure 4 from that report (included in Appendix

shows groups, or units, of plant species that commonly occur together in similar environments. The different types of vegetation units are shown in different colors. All of the dark purple and some of the cream areas are units that contain plant species found in non-forested, freshwater wetland habitats. Several narrow stands of salt marsh vegetation were found on the bank immediately adjacent to the West Branch, but they were too small to map. The only salt marsh units shown on the map are on the ocean side of the dam along the Pleasant River.

The National Wetlands Inventory (NWI) maps created by U.S. Fish and Wildlife are commonly used to identify wetlands of concern for shoreland zoning. However, they are created from aerial photography and are not field verified. The NWI map for the West Branch does not appear to accurately reflect the freshwater wetland environment identified by EA Engineering during their field survey of the marsh in 2005. Staff members from DEP's Shoreland Zoning Unit have advised that municipalities fortunate enough to have any local wetland delineation maps should attempt to make use of them when mapping shoreland zoning boundaries, as they contain a higher level of detail and accuracy than the NWI maps. The NWI maps are to be used when no other field verified data is readily available (Baker and Cayer).

Virtually all of the West Branch and significant portions of its tributaries are bordered by long, and in many cases broad, non-forested freshwater wetlands, as depicted on Figures 4 and 5 from the vegetation and soils report. The shoreland zone along the West Branch is to include all areas within 250 feet of the upland limit of these freshwater wetlands. In the few areas where these wetlands are not adjacent to the river, the shoreland zone will include the area within 250 feet of the normal high-water line of the river. The tributaries to the north and east each appear to drain less than 25 acres and are to be considered streams by definition. According to guidance provided by staff of DEP's Shoreland Zoning Unit, if a stream has a continuous adjacent wetland that is more than 100 feet wide along any 100 foot stretch of the stream, the shoreland zone is to include all of the area within 250 feet of the upland edge of the wetland. However, where the continuous adjacent wetland is less than 100 feet wide (a "fringe wetland"), the community may opt for a shoreland zone that is 75 feet instead of 250 feet from the upland edge of the wetland (Baker). Where there are no wetlands adjacent to a stream, the shoreland zone will include areas within 75 feet of the normal high-water line of the stream.

Due to the passage of small amounts of salt water through the tide gates, there are areas in the lowest reaches of the watershed that currently meet the shoreland zoning definition of a coastal wetland. As mentioned above, there are several narrow stands of salt marsh vegetation along the banks of the West Branch. The area at the upland edge of these narrow coastal wetlands usually transitions to a non-forested freshwater wetland, which extends further inland. The current ratio of coastal wetlands to freshwater wetlands in the West Branch watershed is being controlled by the dam and tide gates with the additional influences of inland and tidal flooding events. However, the results of the soil sampling conducted by EA Engineering indicate that the sixty five years of tidal restriction has not resulted in any apparent marsh substrate decomposition, and that the substrate is capable of supporting tidal marsh vegetation. See the Q&A section below (page 10) for discussion of how future proposals to increase some amount of tidal flow may change the balance between the freshwater and coastal wetlands.

Districts within the Shoreland Zone

The 250-foot shoreland zone (or 75-foot zone for streams) is not an area where all activity is prohibited. Rather it is an area where certain types of land uses undertaken according to the standards, are allowed within certain areas of the shoreland zone. Using the criteria outlined in the State Guidelines in combination with comprehensive plans, municipalities divide the shoreland areas into “districts” and delineate them on an official Shoreland Zoning Map, which is adopted as part of the municipal Shoreland Zoning Ordinance. This districting, or zoning, allows communities to designate areas by the type and extent of existing or planned development, as well as by the level of environmental significance or sensitivity. The various shoreland zoning districts as described in the State Guidelines, from most restrictive to least restrictive, are:

- Resource Protection District
- Limited Residential District
- Limited Commercial District
 - [Note: The Town of Addison received approval from the DEP to designate a special commercial district along the south side of Water Street within the village center as the Addison Point Commercial District (Addison Shoreland Zoning Map).]
- General Development I District
- General Development II District
- Commercial Fisheries/Maritime Activities District
- Stream Protection District

As mentioned above, the State Guidelines contain specific criteria to be used when assigning areas to a specific district. The districts of importance for discussion of the West Branch watershed are the Resource Protection, Limited Commercial and Stream Protection Districts.

The Resource Protection District, as stated in the 2006 State Guidelines, “includes areas in which development would adversely affect water quality, productive habitat, biological ecosystems, or scenic and natural values. **Any of the following areas that occur within the limits of the shoreland zone must be included within the Resource Protection District**”, unless they are currently developed and meet the criteria for Limited Commercial, General Development I, or Commercial Fisheries/Maritime Activities Districts (Cayer and Baker):

- areas within 250 feet, horizontal distance, of the upland edge of
 - freshwater wetlands,
 - salt marshes and salt meadows (according to IF&W maps of 1973), and
 - wetlands associated with great ponds and rivers (contiguous and same or lower surface elevation during normal high water)

IF they are rated moderate or high value waterfowl and wading bird habitat, including nesting and feeding areas, by the Maine Dept. of IF&W that are depicted on a GIS data layer maintained by either MDIF&W or DEP as of May 1, 2006. [Note: underlined words were added as part of 2006 changes.]
- 100-year floodplains as depicted on FEMA’s Flood Hazard Boundary Maps or Flood Insurance Rate Maps, or the flood of record, or in the absence of these, by soil types identified as recent flood-plain soils.
- Areas of two or more contiguous acres with sustained slopes of 20% or greater.

- Areas of two or more contiguous acres supporting wetland vegetation and hydric soils, which are not part of a freshwater or coastal wetland, and which are not surficially connected to a water body during the period of normal high water.
- Land areas along rivers subject to severe bank erosion, undercutting, or river bed movement, and lands adjacent to tidal waters which are subject to severe erosion or mass movement.

The Limited Commercial District includes existing and planned areas of mixed, residential and light commercial (low intensity business and commercial) uses, exclusive of the Stream Protection District. Industrial uses are prohibited.

The Stream Protection District includes all land areas within seventy-five feet, horizontal distance, of the normal high-water line of a stream, with the following exceptions. The portions of a stream that fall within 250 feet of any other shoreland zoning district will be regulated according to the terms of that district (i.e., where a stream flows into a great pond, the pond's 250-foot wide shoreland zone will include the stream). As stated above, DEP has advised that if a continuous wetland adjacent to a stream is more than 100 feet wide (not a "fringe wetland"), that stream segment should not be mapped as a stream protection district. Instead it is to be mapped with a 250-foot wide shoreland zone and assigned to another district.

Discussion of Shoreland Zone Districts in the West Branch Watershed – Disregarding the issue of restoring tidal flow for the moment, the updated 2006 State Guidelines will require both Addison and Columbia, along with many other municipalities, to reassign some shoreland zone areas to the Resource Protection District. When determining which freshwater wetlands had to be placed in the Resource Protection District, municipalities previously referenced IF&W habitat maps dated January 1, 1973. New maps became effective on May 1, 2006, which identify the freshwater wetlands (and adjacent 250-foot upland buffer) that have been rated by IF&W as moderate or high value inland waterfowl and wading bird habitat. By July 1, 2008, municipalities must adopt an updated shoreland zoning map that places these special freshwater wetlands and adjacent shoreland area in the Resource Protection District, with the following two exceptions: 1) areas that are correctly zoned as a Stream Protection District, and 2) areas that are currently developed. According to DEP guidance, the term "developed" means a shoreland zone area having at least one residential or commercial building per 500 feet, over the course of 1000 feet (Cayer & Baker). Freshwater wetland areas that qualify for either of these exceptions are not required to be placed in Resource Protection.

DEP provided maps to each municipality in January of 2007 identifying all of the areas in that municipality rated by IF&W as moderate or high value inland waterfowl and wading bird habitat (IWWH). The mapped areas already include the 250 foot shoreland zone buffer that is to be included in the Resource Protection District (see Appendix for Addison and Columbia maps showing IWWH layer). It is important to note that the IWWH maps do not reflect all of the wetland areas that municipalities are required to include within the shoreland zone. It reflects a portion of the wetland; just the special habitat area and the 250 foot buffer, which DEP requires to be zoned as Resource Protection. Wetland areas that fall outside these special habitat areas may also need to be mapped as part of the shoreland zone, they just don't have to be in the Resource Protection District. These areas can be identified by layering the IF&W habitat map and the National Wetlands Inventory (NWI) map, or a more detailed wetland delineation map such as the one produced by EA Engineering.

Salt marsh and salt meadow areas that were rated by IF&W in 1973 as moderate or high value waterfowl and wading bird habitat are also to be placed in the Resource Protection District. However, this is not a new requirement and although Addison does have such areas identified on the 1973 IF&W maps, none of them are located along the West Branch.

In Addison, the shoreland zone along the West Branch and its unnamed tributary to the east is currently mapped as a Limited Commercial District. However, since it does not appear to be currently developed (as described in the above paragraph), DEP will expect all the moderate or high value Inland Waterfowl and Wading Bird Habitat areas along the West Branch and its tributaries to be rezoned as Resource Protection. Any of the wetlands shown on the West Branch vegetation map created by EA Engineering that extend beyond the moderate or high value Inland Waterfowl and Wading Bird Habitat areas, can be zoned as Limited Commercial.

In Columbia, all the shoreland zone areas along the West Branch as well as Branch, Bells and Ingersoll Brooks are currently mapped as Stream Protection Districts. According to DEP's guidance concerning streams with adjacent wetlands that are more than 100 feet wide, the West Branch and southern sections of Branch Brook and Bells Brook should most likely be removed from the Stream Protection District. Working in consultation with DEP, the shoreland zone in these areas should be remapped to include all areas within 250 feet of the upland edge of the wetland. The portions of these remapped shoreland zones that are moderate to high value inland waterfowl and wading bird habitat (IWWH), as shown on the map provided to the Town by DEP, should be rezoned as Resource Protection. The Stream Protection District can continue to be used in the upstream sections of these brooks. Currently there are no issues in Columbia concerning salt marshes and salt meadows.

See the Q&A section below (page 10) for discussion of how reintroduction of tidal flow may affect the districts within the shoreland zone.

Land Uses and Standards within the Shoreland Zone

The State Guidelines and the municipal Ordinance contain a detailed Land Use Table and an extensive section on Land Use Standards. "Table 1. Land Uses in the Shoreland Zone", lists by district, what land uses are not allowed, allowed without a permit, allowed with a permit from the Code Enforcement Officer, or allowed with a permit from the Planning Board.

The section on Land Use Standards provides specific information and standards for each of the land uses listed in Table 1, including how the standards may differ in the various districts. As a result of the new 2006 State Guidelines, some changes are going to occur in assigning shoreland zoning areas and districts. This will have an impact on land uses for those areas that change districts. A careful review of Table 1 will help to identify those uses that vary significantly by district. There is a highlighted copy of Table 1 in the Appendix that shows the differences in allowed uses and level of permitting in the Stream Protection and Limited Commercial Districts compared to the Resource Protection District. Staffs from both DEP and IF&W have indicated that they do not expect increased tidal flow to have a significant impact on land uses and standards in the West Branch watershed (Baker and Schaeffer).

QUESTIONS AND ANSWERS RELATED TO RESTORATION OF TIDAL FLOW

Most of the above discussions have been based on the current status of shoreland zoning in the West Branch watershed. The following questions and answers highlight how increased tidal flow may impact shoreland zoning requirements, such as changes in the land areas to be included in the shoreland zone, changes in the type of district, or changes in allowed uses.

1. Will the type of wetland change?

Yes, some will change –

Depending on the amount of tidal flow that may be restored into the West Branch, some areas that are currently freshwater wetlands will once again be exposed to tidal action. Any areas subject to the level of the maximum spring tide will become coastal wetlands by definition. The coastal portion of the existing wetlands will expand while the portion of the existing wetlands that are fresh water will shrink. It is anticipated that a high tide would not cover all of the existing West Branch wetlands, even if full tidal flow was restored (Schaeffer). To get an idea of how far inland the coastal portion of the wetlands might be able to extend in the future, if full tidal flow was restored, the Town of Addison requested the mapping of the contour lines that represent mean high water and spring high water spring based on local NOAA/NOS tide station data. The mean high water and spring high water elevation line are shown on the one foot contour maps that were produced for Addison and Columbia by NOAA and James W. Sewall Company. This helps to illustrate the maximum extent of the area that may be affected by the reintroduction of full tidal flow. It is important to note that any future proposals to restore tidal flow may not include a plan to restore full tidal flow. It is more likely that small amounts of tidal flow will be restored initially, with incremental increases over time. Therefore, the affected wetland area is anticipated to be smaller than the area illustrated on the map showing the mean high water and spring high water tide elevations from the tide station.

2. Will the upland edge of the wetland change and require more land to be added to the shoreland zone?

Not in the areas where broad wetlands are adjacent to the river and tributaries – While additional tidal flow will bring more water into the West Branch and its tributaries during high tide (and less water during low tide), it is not expected to cover all of the existing wetlands or extend beyond the existing limits of the current wetland. This is demonstrated by the map Addison recently requested, which shows where in the marsh the contour lines for mean high water and spring high water might be located if full tidal flow were to be restored.

It is important to remember that the wetlands and floodplain of the West Branch have been formed over thousands of years and the restricted tidal flow of the past 60 years has not significantly changed the shape of the wetlands, although it has changed the appearance (Lovit) and vegetation cover (EA Engineering). Construction of the dam and tide gates restricted the tidal flow and many areas that once supported salt-tolerant vegetation transitioned to freshwater wetlands. The wetland transition process would simply be reversed through reintroduction of tidal flow. A study of the soils below the West Branch marsh indicates that the soils below the current freshwater wetland, which supported tidal marsh vegetation prior to the construction of the dam and tide gates, is capable of supporting new tidal marsh vegetation, if tidal flow was reintroduced (EA Engineering). As explained in the answer to the above question, portions of the freshwater wetlands will become coastal wetlands (depending on the amount of tidal flow restored), but the total width of the wetland is not expected to change. What is currently the upland edge of the wetland will likely stay the same, with no additional land needing to be added to the shoreland zone.

3. Will the habitat change, along with the IF&W maps, and could this affect the shoreland district? Yes, over time –

Even though restored tidal flow into the West Branch would immediately change the river and streams and some of the freshwater wetlands to coastal wetlands by definition (areas subject to the maximum spring tide), it would take time for any habitat changes to occur. Habitats are based primarily on vegetation and soils. When a freshwater environment changes to a saltwater environment, it will take time for the new saltwater-tolerant vegetation to become established and a new habitat to evolve. If and when the habitat changes warrant, IF&W may amend their “Significant Wildlife Habitat” maps. Some areas currently rated as moderate or high value Inland Waterfowl and Wading Bird Habitat (IWWH) may change to moderate or high value salt marsh, salt meadow, or Tidal Waterfowl and Wading Bird Habitat (TWWH). The State Shoreland Zoning Guidelines do require salt marshes and salt meadows rated by IF&W as moderate or high value to be included in Resource Protection districts, but not Tidal Waterfowl and Wading Bird Habitat. DEP may allow a municipality to remove areas from the Resource Protection District if IF&W removes an area or rating from a moderate to high value IWWH or changes it to a TWWH, if the community wanted to reduce the level of protection. Any area that IF&W might eventually identify and rate as moderate or high value salt marsh or salt meadow would not have to be rezoned as a Resource Protection District until DEP amends their rules to recognize IF&W habitat maps that are more recent than the May 1, 2006 version, referenced in the current rules.

4. In areas where there are no wetlands or only narrow, “fringe” wetlands, will the area to be included in the shoreland zone change? Yes –

a) There are a few areas along the West Branch and the tributaries that do not have adjacent non-forested wetlands greater than 10 acres. In these areas, the shoreland zone has been measured from the normal high-water line. If tidal flow is restored, any of these areas that start to experience tidal action will become a coastal wetland, by definition. In coastal wetlands, the measurement for the 250-foot wide shoreland zone measurement starts at the line formed by the maximum spring tide level (and/or the line formed by the landward limits of the salt tolerant vegetation). Since the level of the maximum spring tide level will be farther inland than the current normal high-water line of the river, the shoreland zone will shift inland. If the banks are steep however, the lateral shift will be minimal.

b) **In Columbia** the change will be more significant – where the brooks are actually streams by definition and have no wetlands or only fringe wetlands, the shoreland zone has been a 75-foot wide Stream Protection District, as measured from the normal high-water line of the stream, or the upland edge of the fringe wetland. If restored tidal flow results in tidal action in these areas, they will be considered coastal wetlands and can no longer be in a Stream Protection District. The area of the shoreland zone will increase from 75-feet to 250-feet wide, and will be measured from the maximum spring tide level. If any of these new coastal wetland areas that were previously in Stream Protection are also shown on the IF&W maps as moderate or high value inland waterfowl and wading bird habitat, they will likely need to be put in a Resource Protection District. Community officials may want to consult with DEP staff from the Shoreland Zoning Unit.

5. Will the minimum lot requirements change? Yes –

In some areas the requirement will become less restrictive. Shore front areas that have not been subject to tidal action but become affected as tidal flow is reintroduced, will have reduced minimum lot requirements, as stipulated in the Land Use Standards section of the State Guidelines, and in the Addison and Columbia Ordinances.

- Minimum shore frontage Tidal = 150 feet Non-tidal = 200 feet

- Minimum lot area Tidal = 30,000 sq. feet Non-tidal = 40,000 sq. feet

6. What are some of the differences in Allowed Uses if the Shoreland Zoning District changes along parts of the West Branch or its tributaries?

Areas changing from Limited Commercial or Stream Protection to Resource Protection will have some new restrictions regarding allowed uses within the 250' shoreland zone

- New principal structures will not be allowed, except:
 - The Planning Board may allow a single family residence structure according to the special exception provisions (Section 16.E.) in the State Guidelines.
 - Small, non-residential facilities for education, scientific, or nature interpretation purposes continue to be allowed
- No new marinas, campgrounds and parking facilities.
- No new roads will be allowed, except to provide access for allowed uses or when no other reasonable alternative route or location is available outside the Resource Protection District.
- No mineral extraction allowed in areas designated as resource protection due to wildlife value.
- Some uses previously allowed without a permit will require a permit.
- Some uses previously allowed with a Code Enforcement Officer permit will require review and permitting by the Planning Board.

7. Would there be other significant differences in the Land Use Standards for the West Branch watershed if tidal flow is restored? No –

Although restoration of tidal flow may impact the issues associated with shoreland zoning AREAS and DISTRICTS (which can change the types of land uses and who reviews and issues the permit), only a very few land use STANDARDS would change.

- As discussed in question 5. above, the minimum lot standards are actually less stringent for tidal areas than non-tidal areas.
- If the Planning Board issues a special exception permit for a single residential structure in the Resource Protection District, the structure must be set back to the greatest practical extent, but not less than 75 feet from the normal high-water line of the wetland.

8. Are there other land use and permitting issues that may be affected by restoration of tidal flow in the West Branch and its tributaries? Yes –

a) There is another important State law that identifies certain natural resources as having “state significance” due to their recreational, historical and environmental value to present and future generations. The Natural Resources Protection Act (NRPA) (Title 38 M.R.S.A. sections 480-A through 480-BB) is designed to prevent the degradation and destruction of and to encourage the protection or enhancement of: coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; significant wildlife habitat; and fragile mountain areas. This is a larger set of natural resources than is protected under shoreland zoning.

Unlike shoreland zoning, the NRPA is directly administered and enforced by the Department of Environmental Protection, through the Bureau of Land and Water Quality (although towns may apply to DEP to administer NRPA). Under the NRPA rules and regulations, DEP permits are required for certain activities **in, on or over** the protected natural areas listed above. This is an entirely different area than what is regulated under shoreland zoning, (although SZ and NRPA permits for piers, docks and wharfs share a common area). However, NRPA permits are also

required for activities on land **adjacent** to any freshwater wetland, great pond, river, stream or brook that could cause material to be washed into these resources. Examples of these activities include:

- Dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials;
- Draining or otherwise dewatering;
- Filling;
- Constructing, repairing or altering any permanent structure

“Adjacent” in most cases, means the area within 75 feet of the protected natural resource. However, recent amendments to the NRPA regulations and associated DEP rules have established buffers adjacent to significant wildlife habitat areas, which extend 250 feet inland. Currently, there is legislation pending that may reduce this buffer to between 150 and 100 feet.

Since some of the protected resources and land areas regulated by NRPA are similar to those regulated by shoreland zoning, many of the impacts discussed in this paper will also apply to NRPA. Tidal restoration activity that increases or introduces tidal action, increases the water surface elevation from which field measurements will be taken and/or alters a significant wildlife habitat, may affect the areas and activities regulated under NRPA.

b) Information should be obtained from the U.S. Army Corps of Engineers to determine if permitting under their regulations may be impacted (i.e., section 404 permits).

9) For questions not included above or for additional explanation of the issues and answers provided, contact staff of DEP’s Shoreland Zoning Unit (Augusta: Rich Baker, 287-7730; Bangor: Jennifer Cayer, 941-4116) or the DEP Shoreland Zoning website at:
<http://www.maine.gov/dep/blwq/docstand/szpage.htm>

CONCLUSION

The tidal restrictions created by the dam, tide gates, and upstream road culverts have changed the hydrology in the watershed of the West Branch of the Pleasant River and altered the appearance and vegetation of the previous tidal marshes. Historical photographs of the marsh taken from the air and along the roadways look somewhat different than the wetlands of today (Lovit). The river and brooks are now confined to narrower channels, their waters don’t rise and fall with the tide, and the types of vegetation covering the wetlands have changed. Other important aspects have not changed though. Inland waters have continued to flood the area and a broad variety of wetland vegetation continues to cover the area. A vegetation and soil report for the West Branch has concluded that the soil base below the existing freshwater wetlands previously supported and continues to be capable of supporting tidal marsh vegetation.

Restoration of partial or full tidal flow will not affect entire West Branch marsh - If future proposals result in modifications to the tide gates and dam, tidal water would flow up into the marsh over some of the areas that are currently covered with freshwater wetland vegetation. How much water enters the marsh depends on the type of modifications the Towns may be interested in pursuing. The tidal water would not cover the entire area even if full tidal flow was restored. The maximum area it could affect would be those areas at or below the elevation of the tides occurring on the ocean side of the dam, as shown on the aerial photo map created for Addison in April 2007.

Reintroduction of partial tidal flow would affect less area. Areas that may be affected are now covered for the most part by non-forested freshwater wetland, which should eventually transition back to saltwater marshes, saltwater meadows and coastal wetlands.

Changes to shoreland zone areas, districts, and upland limit of the wetland related to freshwater vs. coastal wetlands - According to historical information and soil sampling, tidal influence could be expected to extend up the river and tributary channels to the vicinity of Rt. 1, if full tidal flow was restored. From the perspective of shoreland zoning, new areas that start experiencing tidal action will be considered coastal wetlands by definition. The shoreland zoning impact of an area changing from a freshwater wetland to a coastal wetland will be greatest for streams (as defined in the State Guidelines) that have previously been zoned in a Stream Protection District. In the West Branch watershed, this would include only those tributary streams in Columbia that are south of Rt. 1 having adjacent wetlands that are wider than 100 feet. In these areas the shoreland zone should be increased from 75 feet to 250 feet from the upland edge of the wetland and they should be zoned as something other than Stream Protection. Depending on the new district assigned, the allowed land uses would change in these areas according to Table 1. – Land Uses in the Shoreland Zone, as contained in the State Guidelines.

Areas seeing new or increased tidal influence where extensive non-forested freshwater wetlands have existed adjacent to the river or stream are not likely to see changes in either their shoreland zone area or district. These areas already have a 250-foot wide shoreland zone, which is measured from the upper edge of the wetland. As tidal water is introduced, the upland edge of the coastal wetland will become the level of the maximum spring tide and/or the line formed by the landward limits of the salt tolerant vegetation. Although tidal water will be flowing back and forth into the marsh and some of the wetland vegetation will transition to salt-tolerant species, the basic shape of the entire wetland area is anticipated to remain the same. Tidal water will not fill the entire wetland complex and there will still be areas where freshwater wetlands will extend landward behind coastal wetlands. The most upland limit of the wetland (whether it is freshwater or coastal) should not move farther inland and the district should not have to change.

Areas already zoned as Resource Protections - Much of the non-forested freshwater wetland area in the West Branch watershed will be rezoned to a Resource Protection District by July 1, 2008, to comply with the shoreland zoning requirement related to the updated IF&W maps depicting moderate or high value inland waterfowl and wading bird habitats. This will happen regardless of any plans to restore tidal flow. Areas that have already been placed in Resource Protection would not see any additional shoreland zoning restrictions as a result of future plans to restore tidal flow.

Changes to wetland habitat that may affect shoreland zone districts in the future - One final possible impact of restoring tidal flow is that portions of the freshwater habitat in the West Branch watershed will gradually transition to a saltwater habitat if various amounts of tidal flow are restored. At some point, IF&W may reexamine the habitats and alter their designation or rating of the West Branch area. New areas could potentially be rated and mapped as moderate or high value salt marshes or salt meadows. However, DEP could not require the towns to add these areas to Resource Protection until such time that the DEP rules were amended to recognize IF&W maps more recent than the May 1, 2006 version currently referenced in the State Guidelines. IF&W could also potentially remove areas currently rated as moderate or high value *inland* waterfowl and wading bird habitat, and designate them as *tidal* waterfowl and wading bird habitat. Wetland areas rated by IF&W as moderate or high value *inland* waterfowl and wading bird habitat is not required

to be placed in Resource Protection. If the Towns desired, they could work with DEP to determine if these areas could be reassigned to a district other than Resource Protection.

GIS maps needed to help Towns visualize and understand the layers of data that impact shoreland zoning – Gathering all the necessary information and maps that towns need to develop a shoreland zoning map, which is accurate in the eyes of the public, the local officials and the DEP is not an easy task. Being able to see all the appropriate data layers on one map would greatly assist towns as they develop their maps. GIS mapping programs provide the ability to produce such maps and allow great flexibility in adding or changing layers of data over time as needed. The Maine Office of GIS website provides public access to many of the digital layers that help in producing such maps. Major pieces that would be helpful to display on a single map include:

- Aerial photo base map, if available, or other digital base map of area if it provides a higher level of detail than the USGS topographic map;
- National Wetlands Inventory map
- Local wetland delineation map(s) produced by qualified professional
- Flood Insurance Rate Map / Flood Hazard Boundary Map
- IF&W map of moderate or high value inland waterfowl and wading bird habitat
- Tax map

Assistance with creating GIS maps may be available through Regional Councils of Government (such as Eastern Maine Development Corporation), through private consultants, in collaboration with universities (such as UMM or COA), or possibly through partnerships or grants from State and Federal agencies.

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